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PN - JP3041271 A 19910221
 PD - 1991-02-21
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 TI - FOUR-WAY VALVE
 AB - PURPOSE: To obtain a compact four-way valve structure of which is simple by turning a valve material having a low pressure communicating passage and a high pressure communicating passage at the predetermined angle against a valve seat having a low pressure port in the central part and a high pressure port in the peripheral part and two communicating ports with a driving part in a four-way valve of a refrigerating circuit. CONSTITUTION: At the time of switching from cooling operation to heating operation, a heating element 34 of a driving part 31 is electrically turned on, the volume of the wax inside of a power element 33 is expanded to push down a driving shaft 36, and a pin 38 falls along a falling inclined channel of a cylindrical cam 42 to turn a valve material 18 at 90 deg.. Next, when the electrical feeding is stopped, the pin 38 rises along a rising inclined channel to turn the valve material 18 at 90 deg., stillmore. A low pressure communicating passage 20 of the valve material 18 continues a low pressure port 14 and a continuity port 17 of a valve seat 13, and a high pressure communicating passage 21 continues a high pressure port 15 and a continuity port 16 of the valve seat 13. On the other hand, at the time of switching from heating operation to cooling operation, the valve material 18 is turned at 180 deg. in the same way, and the low pressure communicating passage 20 continues the low pressure port 14 and the continuity port 16, and the high pressure communicating passage 21 continues the high pressure port 15 and the continuity port 17. The structure can be thus simplified and made compact.
 IN - TAKAHASHI IKUO
 PA - RANCO JAPAN LTD
 IC - F16K11/074

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⑮ 発明の名称 四方弁

⑯ 特 願 平1-176065

⑰ 出 願 平1(1989)7月7日

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明 細 書

1. 発明の名称

四方弁

2. 特許請求の範囲

(1) 円筒状の弁箱と、

この弁箱の一端に嵌合され、低圧口、高圧口および2つの導通口を有する弁座と、

前記弁箱の内部に回動可能に嵌合され、一端面に弁座の低圧口に対して2つの導通口のうちの一方を所定角度回動ごとに交互に連通させる低圧連通路を設けるとともに、高圧口に対して2つの導通口のうちの他方を所定角度回動ごとに交互に連通させる高圧連通路を設けた弁体と、

前記弁箱の他端に嵌合される蓋体を介して装着され、前記弁体を所定角度ずつ回動させる駆動部と

を具備したことを特徴とする四方弁。

(2) 蓋体から他端方向に突設された円筒体と、

この円筒体内に軸方向に移動可能に配設され、

一端部が弁体の他端にスプライン嵌合し、他端方向にばねにて付勢される駆動軸と、

前記円筒体の内側に嵌合され、所定角度ごとに山溝部を他端側に有するとともにこの山溝部間に谷溝部を一端側に有する波形状のガイド溝を有し、このガイド溝にピンが嵌合する駆動軸が一端方向または他端方向に移動する際に、その駆動軸を所定角度の半分ずつ回動させる円筒カムと、

前記円筒体の他端に嵌合され、外側に配設され通電により発熱する発熱体によって加熱された際に、前記駆動軸を一端方向に押圧する押動部を有するパワーエレメントと、

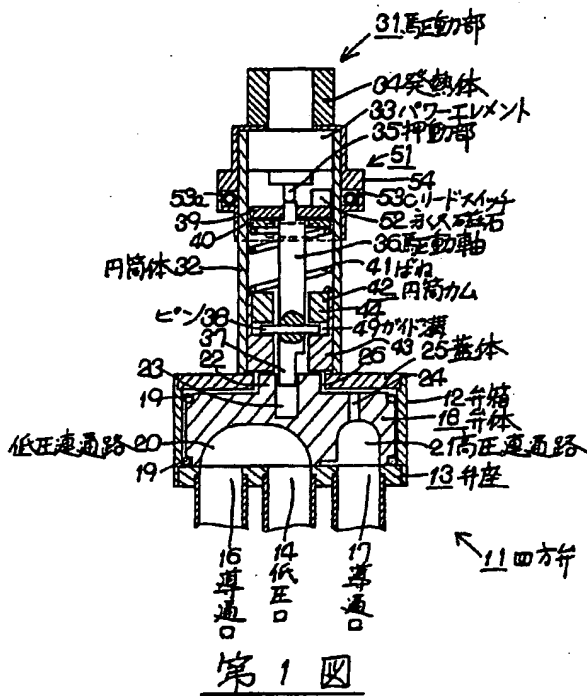
前記駆動軸に一体的に固着された永久磁石と、

この永久磁石の回動域に臨む円筒体の外側に、前記ガイド溝の山溝部および谷溝部の位置に対応して配設されたリードスイッチと

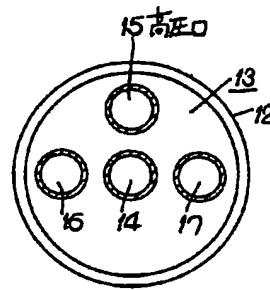
を備えたことを特徴とする請求項1記載の四方弁。

3. 発明の詳細な説明

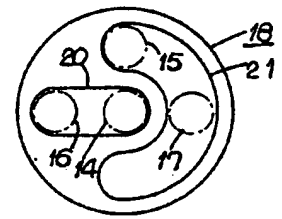
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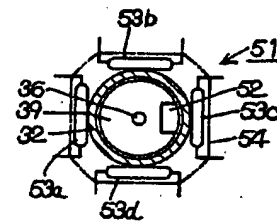
第 1 図



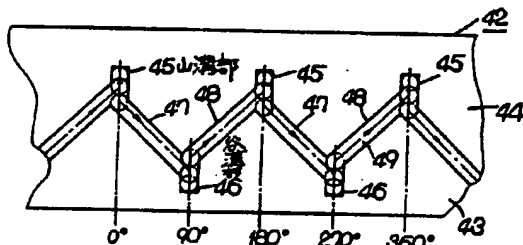
第 2 図



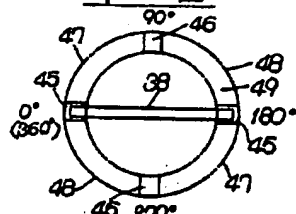
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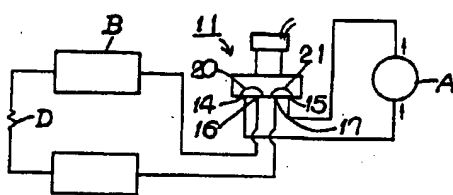
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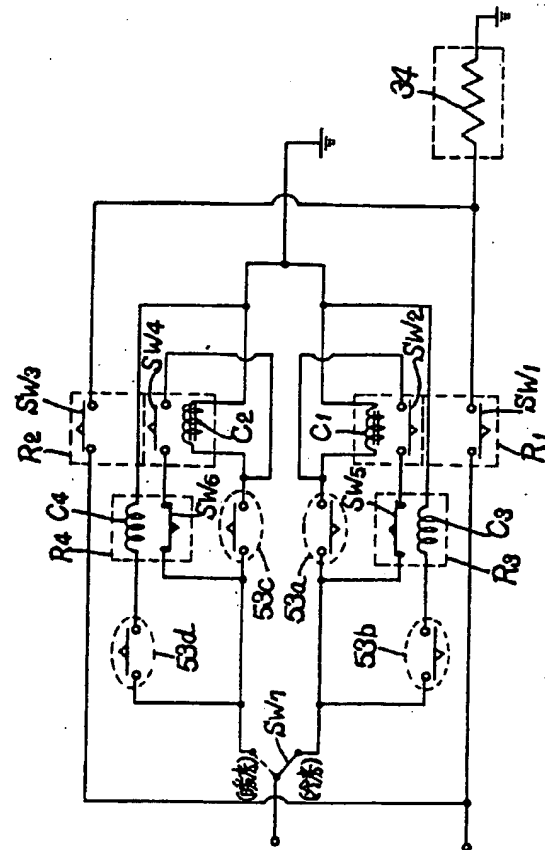
第 5 図



第 6 図



第 7 図



第 8 図